

GSAW 2021 Tutorial E:

Realizing Cloud-based Satellite Operations: Best Practices & Lessons Learned

Overview:

Cloud service offerings have the potential for significant operational and cost performance benefits over traditional satellite operations solutions. However, taking full advantage of the flexibility and adaptability offered by Cloud Service Providers requires rethinking many aspects of satellite operations from mission planning and contact scheduling to security, failover, and continuity of operations. For government operators, realizing a cloud-based future is also complicated by the need to maintain operational support for existing assets during transition.

This tutorial will scratch the surface on three key aspects for Realizing Cloud-based Satellite Operations:

- Adapting Cloud Technologies for Mission Critical Operations – Will examine how Cloud technologies can be leveraged to support, enhance & evolve traditional satellite operations concepts
- Secure Resilient Cloud Operations – Will examine how to cost effectively build operational resilience and security in the cloud
- Migrating legacy Ground systems to the Cloud – Will discuss strategies for cost-effective cloud migration of existing operational assets

Instructors: Stephen Marley and Sheryl Olguin, The Aerospace Corporation

Biographies:

Dr. Stephen Marley – As a Ground Systems Enterprise Architecture Dr. Marley's is focused on complex/scientific data information systems in support of environmental observation science and ground system operations. With nearly 30 years' experience of developing environmental satellite ground systems, he has successfully led and/or participated in the designing of satellite ground systems for the European Space Agency's European Remote Sensing satellites, NASA's Earth Observing System, USGS Landsat program, and most recently NOAA's Geostationary and Polar satellite programs. Currently, working within the Ground Architecture team at NOAA, Dr. Marley is helping to establish Enterprise Architecture best practices and tools defining the technical framework for the realization of the future NOAA Ground Enterprise. Dr. Marley is a graduate in Infrared Astronomy from the University of Leeds. He is also a Certified Enterprise Architect, an Associate Editor of The Journal of Enterprise Architecture, and a proud alum of the International Space University.

Sheryl Olguin has over 30 years' experience bringing creative thinking and entrepreneurial approaches to new technology roll-outs, leadership of design, management and implementation of complex enterprise systems and software, and enterprise/web/mobile applications. Prior to joining Aerospace, was COO of Naviscent, a Silicon Valley based UX agency focused on applying UX/UE research, design, and engineering practices to Fortune 1000 and Global 2000 corporations' enterprise systems and Internet/Mobile enabled solutions for optimal value, technical innovation, and maximum user engagement. At Harris Corp, Ms. Olguin led the Corporate Internet technology strategy team, web development center of excellence, and managed the digital datacasting aspects of the Harris/PBS strategic initiative to advance the US Digital TV transition by demonstrating capabilities, educating engineers, and informing US Broadcast management of business models enabled.

Description of Intended Students and Prerequisites:

Familiarity with Cloud concept is desirable, but not necessary.

What can Attendees Expect to Learn:

Attendees will learn about the current state of Cloud-based ground system services, considerations of secure & resilient satellite operations in the cloud, and approaches to cost effectively migrate legacy systems & services.